

# Examining the Moderating Effect of Organic Structure and Innovative Culture on the Relationship between Social Capital and Knowledge Management Processes at a Research & Development Organization

## Article History

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**Abstract: Purpose-** In today's heavy competitive environment, organizations have found that the knowledge is the best tool for keeping up with competitors. In this regard, the role of employees, as knowledge holders and the most important capital of organizations have been being taken into account more than before. Since the existence of social capital in organizations lead to improvement and development of knowledge management processes (KMP), examining the level of social capital as an important dimension of intellectual capital and its role in KMP is the main purpose of this article. **Design/methodology/approach-** By reviewing the existing literature and using standardized questionnaire, it was tried to examine the relationship between social capital and KMP through the moderating role of organic structure and innovative culture in the organization. After review of the existing literature in depth, we took advantages of Nahapiet and Ghoshal Model for measuring social capital and in order to measure the KMP, Bukowitz and Williams Model was used. The main hypothesis of this research was that there was a significant relationship between KMP and social capital through moderating role of organic structure and innovative culture in the organization. In order to test the hypothesis, using the test methods for correlation coefficients (Pearson and Spearman), a standardized questionnaire was designed and distributed among our target segment including faculty members, researchers and administrative staffs of university. **Findings-** The results showed that contrary to our expectation, considering moderator variables, structure and culture does not have positive and significant effect on KMP in the level of the organic structure and innovative culture of social capital. It was revealed that considering those two variables, social capital does have a significant and positive effect on KMP in the level of mechanical structure and non-innovative culture. We also found that there was a considerable relationship between cognitive and relational dimensions of social capital and KMP. Besides that, it was understood that there was a positive and significant relationship between each of organic structure and innovative culture's variables and social capital and KMP's variables. **Research limitations/implications-** Risks of method variance or response biases are likely as all Data are drawn from employee surveys, and some selection bias as respondents could not be directly compared with non-respondents. **Originality/value** – This study makes a significant contribution to the intangible assets literature by providing further evidence of the impact of culture and structure on intellectual capital.

**Keywords:** Knowledge Management, Research & Development Organization, Social Capital.

## 1. Introduction

In the dynamic, complicated, and unstable environment of contemporary business, organizations are confronting with heavy competitive and challenging atmosphere and this issue endangers their survival and they should move at the edge of knowledge for their survival and growth and compile new solutions and methods and do innovation and creativity continuously. The organizations found out that nothing as much as knowledge can survive them in the competitive world. Knowledge management as a tool that can collect existing knowledge, and can arrange and make it dynamic and distribute it in the whole organization became important. Organizations having implemented knowledge management strategies provide the possibility of innovation in their processes, activities, products, and services and thus improve their competitive position.

Nowadays in addition to the tangible assets, intangible assets have key importance in order for the organizations to achieve further success. In the present era in order to develop, we need social capital more than requiring economical, physical, and human capital; because in the absence of social capital, other capitals lose their effectiveness and navigating the paths of cultural and economic development and evolution becomes uneven and difficult. The social capital in the macro level of management or in the

level of organizations and enterprises management can create a new recognition of economical-social systems and help managers in leading the system better. Therefore, the social capital issue is regarded as a pivotal principle for achieving development, and those managers who can create social capital in the macro level of community would prepare their path to occupational and organizational prosperity.

Recognizing factors impacting on organizational knowledge management is among the primary measures in effective implementation of intellectual capitals of organization. Knowledge-based organizations require acquiring knowledge, creating knowledge, and sharing knowledge; moreover they require making social interactions and communications among the employees. Hence, regarding the definitions and dimensions of knowledge management and also social capital that in both of them the emphasis is put on the interactions and communications among people, investigating the relationship between social capital and knowledge management and also the ratio that knowledge management is affected by social capital in the organization becomes essential.

Moreover, the organizations should be flexible enough so that they can be responsive to all possible conditions. Creating an innovative culture in the organizations and having an organic structure help organizations to gain such flexibility, and also help institutionalization of creativity in the organization and the organization to have an idea for any condition.

Hence in this research we investigate the moderating effect of organic structure and innovative culture on the relationship between social capital and knowledge management processes. This issue is one of the new topics that is felt a need to study, and this research can create a new perspective in the space of studies related to social capital and knowledge management.

## **2. Literature Review**

According to Peter Ducker the twenty-first century is the century of knowledge economy. In this economy, the intellectual assets and human capitals in particular are regarded as the most important organizational assets, and potential success of organizations roots in their intellectual capabilities (Hajikarimi and Farajian, 2009). It is difficult to have an accurate definition of intellectual capital. Stewart (1994) calls intellectual capital a useful packaged knowledge that includes organizational processes, technologies, patents right, employees' skills, and information related to customers and suppliers and beneficiaries (Roos, 2017). Bontis (1998) defines the intellectual capital as a set of intangible assets (resources, abilities, and competition) that are obtained by organizational performance and value creation (Gogan et al., 2016). On the other hand, intellectual capital is a wide concept that is often divided into separate categories. The most common classification according to Askandya Model includes two categories: human capital and structural capital (Akhavan et al., 2006). Ramezan (2010) also knows intellectual capital as having three dimensions of structural capital, human capital, and social capital (Zahedi M. et al., 2020).

The social capital concept, because of its content and nature, makes relationship with many issues raised in human and social domains such as sociology of social organizations (Zahedi M. R. and Naghdi, 2020). Although this relationship and connectivity in its type indicates the functional importance of social capital, it results in complexity, expansion, and diversity of issue too, so that its outcome can be observed in its multi-dimensions and taking numerous analytical levels and units, and related conceptual definitions, and operational indicators (Alam, 2019).

Social capital refers to the connections and communications among members of a network as a valuable source; because these communications by creating norms and mutual trust result in the realization of goals. In other word, in the light of mutual communications social capital results in closeness of people to each other and facilitates cooperation. Scholars and experts in the social sciences defined and interpreted social capital with regard to their specialized fields (psychology, sociology, management, and so on) and their theoretical views. According to Robert Putnam the social capital is the relationship among people, social networks, and mutual norms, and the social trust that is obtained in this way (Lin et al., 2016). Portes (1998) Defines social capital as the ability of activists to achieve and sustain resources because of membership in social networks. In analysing the social capital, he focuses more on the social relationships and networks (Fieseler and Fleck, 2013). Woolcock (1998) defines the social capital as the information, trust, and norms of mutual action that are the inseparable components of one's social network (Ghorbani and Khanachah, 2020). Tijhuis et al. (1995) knows the social capital as a combination of network size, power of communications and resources that are concentrated among the people of network and the relationships in social networks (Zahedi M. R. and Naghdi, 2020). Adler and Kwon (2002) know the social capital as the basis for describing and explaining relationships among people and organizations (Alvani et al., 2007). Francis et al. (2002) believes that the social capital can be

known as a result of phenomena of mutual trust, mutual social interaction, social groups, feeling group and social identity, feeling of a common image of future, and group working in a social system (Zahedi M. *et al.*, 2016).

## 2.1. Social Capital Dimensions

According to "Candy" Group of Harvard University dimensions of social capital are: trust, the ability of making social relationships informally, leadership and civil partnership, diversity in sociability and friendships, forgiveness and the spirit of volunteerism and political partnership (Bar, 2004). Flor divides social capital into two parts: Bonding Social Capital and Bridging Social Capital. Nahapiet and Ghoshal (1998) believe that the social capital includes (Lee, 2009):

1. **Structural Dimension** that includes communicational patterns among members of a social group or unit, and it also includes three dimensions of network connection, network orders, and network stability.
  - *Network connection* includes specific methods whereby members of a social unit are related and cooperate with each other.
  - *Network orders* determine the connection patterns among members of a social unit.
  - *Network stability* also includes the ratio of closeness and similarity of people in a social unit.
2. **Relational Dimension** includes the ratio of mutual trust among members of a social unit. Trust is a very important and vital factor in providing effective mutual communications among members. Cases like the ratio of members' trust to each other, tendency to cooperate with people having opposing view in a unit, and the ratio that the members count on their colleagues' sayings show the ratio of mutual trust among members of a social unit.
3. **Cognitive Dimension** includes common cultural and social perception, beliefs and assumptions that through common concepts and memories or common language are accepted by people and remain among them. This dimension includes two dimensions of common goals and common culture.
  - *Common goals* is the ratio of common understanding and view of members of a social unit about the goals and results of group activities.
  - *Common culture* includes the ratio of common behavioural norms among members too. As an example, the point that to what ratio this tendency exists among members to participate in group activities of organization shows the ratio of common culture among members.

## 2.2. Knowledge Management

There is no general consensus about the definition of knowledge management, and various definitions are offered in this respect that each one shows some dimensions of this issue. Malhotra offers his definition about knowledge management as: knowledge management is a process whereby organizations gain skills concerning learning (internalizing knowledge), encoding knowledge (externalizing knowledge) and knowledge distribution and transfer (Akhavan *et al.*, 2013).

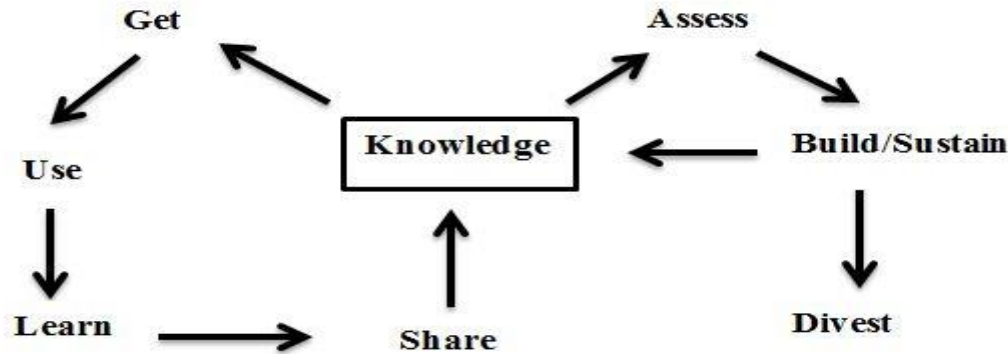
Bukowitz and Williams define knowledge management as a process whereby the organization produces value and wealth by using intellectual assets and based on its knowledge (Dalkir, 2017). Chong et al. following their experimental research know the knowledge management as a process of implementing and offering people's skills and proficiencies in the organization protected by information technology (Alaarj *et al.*, 2016). Gelinis *et al.* (2004) stated the knowledge management as the process of counting, storing, retrieving, and distributing the knowledge of people in the organization to be used by others in order to improve the quality or efficiency of decision makings. Newmen defines knowledge management as a set of processes of building, sustaining, transferring, and implementing knowledge (McGee, 2017). Gundry *et al.* (2010) defines knowledge management as an integrated and systematic process in organizational level that includes activities of acquiring, creating, storing, distributing, and implementing knowledge by people and groups to reach organizational goals (Wickramasinghe, 2007). Bhatt (2001) defines knowledge management as a process of creating, offering, distributing, and implementing knowledge in the organization by people (Najafbeigi *et al.*, 2011). Clemmons (2002) knows the knowledge management as a systematic process whereby the required knowledge for organizational success is identified, produced, shared, and implemented (Kulkarni *et al.*, 2006). In summary, knowledge management is defined as the processes that deal with the way of creating, acquiring, storing, sharing, distributing, and sustaining knowledge in many researches (Bjornson and Dingsoyr, 2008; Dalkir, 2017).

### 2.3. Knowledge Management Processes

Hicks proposed a model for implementing knowledge management composed of the four following stages: creating, storing, distributing, and implementing knowledge (Peng and Lin, 2016).

Another model proposed for implementing knowledge management was the model offered by Bukowitz and Williams (figure 1). Bukowitz and Williams defines a seven stages process for knowledge management that includes getting, using, learning, sharing, assessing, building/sustaining, and divesting knowledge (Khalaji *et al.*, 2012).

**Figure1.** Bukowitz and Williams model (Evans and Ali, 2013).



### 2.4. The Relationship between Social Capital and Knowledge Management Processes

Experimental studies that investigated and studied the relationship between social capital and various activities of knowledge management do not have that much expansion. Among the researchers' considerable studies in this domain that search for the relationship between social capital and knowledge management, the following cases inserted in table 1 can be referred to.

**Table 1.** Summary of studies

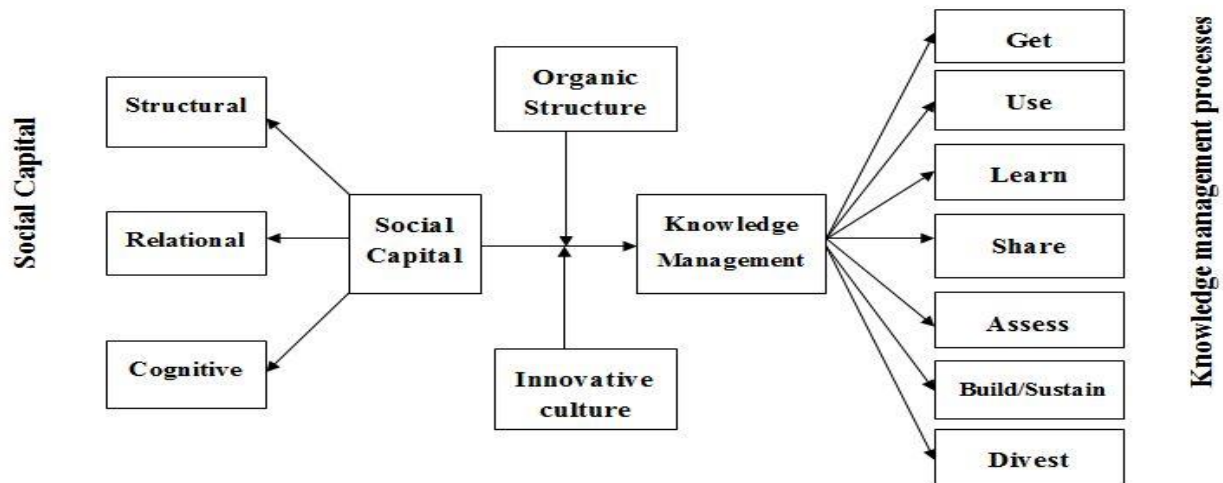
Name of Researcher(s)	Summary of research
(Mikovic <i>et al.</i> , 2020)	Showed a significant relationship between knowledge management and social capital in the target organization.
(Ado <i>et al.</i> , 2017)	Showed a significant relationship between social capital and knowledge transfer in the target organization.
(Chuang <i>et al.</i> , 2016)	They investigated the relation between social capital and tacit knowledge.
(Pellegrini <i>et al.</i> , 2020)	They investigated the Correlation between Social Capital and Knowledge Management in National Refining and Distribution of Oil Company in Iran.
(Moustaghfir <i>et al.</i> , 2013)	They have attained enough evidences concerning relation between social capital and knowledge management.
(Moustaghfir <i>et al.</i> , 2013)	They have attained enough evidences concerning relation between social capital and knowledge management.
(Mikovic <i>et al.</i> , 2020)	In their research, showed the relation between social capital and knowledge management in obtaining higher performance by the organization
(Koka and Prescott, 2002)	They have attained enough evidences concerning mutual impact of social capital, creation and utilization of knowledge.
(Dirgincius, 2014)	They investigated the relation between social capital and knowledge management in obtaining sustained superior performance by the organization.
(Ruuska, 2005)	They investigated the relation between social capital and knowledge management in organizational network.
(Isa <i>et al.</i> , 2010)	In their research, they investigated the relation between social capital and tacit knowledge sharing.
(Honari, 2012)	In his research, he investigated the relation between social capital of organization and quality of main activities of knowledge management in sport organizations.
(Zhang <i>et al.</i> , 2010)	They performed an empirical study regarding the relation between social capital, reasonable cognition, and sharing knowledge In product's development team.

(Hau <i>et al.</i> , 2013)	He has examined concept of social capital in value creation in the company from knowledge management perspective, and also has discussed about social features of different types of knowledge (tacit, explicit, and potential).
(Manning, 2010)	In his project, he has explained and developed social capital for knowledge management purposes.
(Santana, 2014)	In their research, they investigated the relation between social capital and knowledge transfer in organization.
(Darvish and Nikbakhsh, 2010)	In their research, they investigated the relation between social capital factors and knowledge sharing.
(Daud and Yusoff, 2010)	In their research, they have studied the role of social capital as an mediator variable on the relation between knowledge management and organization's performance in small and medium size businesses.

## 2.5. Research Conceptual Model

With regard to the performed studies, this research seeks to find out the relationship between social capital and knowledge management processes through moderating role of indicators of organic structure and innovative culture in the research and development organization. In this research in order to evaluate social capital we benefit from Nahapiet and Ghoshal's model and to evaluate knowledge management processes we benefit from the model offered by Bukowitz and Williams. The research conceptual model is according to the following figure.

Figure 2. Conceptual Model



## 3. Research Hypotheses

Considering the major question of research that we were searching for its response, the following hypotheses are raised:

Major Hypothesis: There is a significant relationship between knowledge management and social capital with regard to the moderator variables of structure and culture.

Subsidiary Hypotheses:

1. There is significant relationship between structural dimension of social capital and knowledge management processes of target organization.
2. There is significant relationship between relational dimension of social capital and knowledge management processes of target organization.
3. There is significant relationship between cognitive dimension of social capital and knowledge management processes of target organization.
4. There is a significant relationship between the ratio that a structure is organic and knowledge management processes of target organization.
5. There is significant relationship between the ratio that a culture is innovative and knowledge management processes of target organization.
6. There is a significant relationship between the ratio that a structure is organic and social capital of target organization.

7. There is significant relationship between the ratio that a culture is innovative and social capital of target organization.

## 4. Methodology

Since we are seeking to solve a problem and offer a solution in this research, it is an application research type in respect of goal. In this research various models of social capital and knowledge management processes were investigated, and to collect data a questionnaire was used. Thus, our research is a descriptive-survey type in respect of data collection. The major tools of data collection in this research are the standard questionnaire of Bukowitz and Williams and the questionnaire of Nahapiet and Ghoshal. The validity of these questionnaires was confirmed by referring to professors and experts. In this research the reliability of questionnaire or its trustworthiness was calculated by using Cronbach's alpha measuring method. Based on the obtained Cronbach's alpha values, the reliability of research variables are at proper and acceptable level. Indicators and items related to the questionnaire are mentioned in table 2.

### 4.1. Statistical Population and Sample

At first those academic members, researchers, connoisseurs and experts who were familiar with the research topic were identified in 4 subset of research and development organization (staff centres, preparation and passive defence complex, management and soft technologies complex, and materials engineering complex), and then it was appointed to determine the selected ratio of specified statistical population by using the formula of determining statistical sample size. Afterwards, by using simple random sampling method, the questionnaires were distributed. The size of research statistical population is 100 people, but census of such a population because of various reasons such as spending much time, lack of access to all community members, and so on is not possible; hence the sampling method was used. Since in this research the statistical population is restricted and specified, we used Cochran formula to specify the statistical sample size. With regard to the formula, the selected sample size of this research is equal to 66 people.

## 5. Results

In order to determine the normality of research variables, the Kolmogorov–Smirnov test was used, and with regard to the obtained test results and significance level which is more than 0.05 for all variables (except structural and cognitive dimensions of social capital), it can be stated that the data normality hypothesis is not rejected. Considering the results of normal test and also the mutual impacts of variables, in order to test research hypotheses the Pearson's correlation test is used, and for structural and cognitive dimensions of social capital the Spearman's correlation test was utilized.

**Major Hypothesis: There is a significant relationship between knowledge management and social capital with regard to the moderator variables of structure and culture.**

In order to consider the moderator variables of structure and culture, in inferential analysis of the relationship between knowledge management and social capital, each one of the structure and culture variables are divided into two parts firstly, and then the relationship between knowledge management and social capital are analyzed in the context of each one of the four following parts (mechanical structure level ( $\leq 3$ ), organic structure level ( $> 3$ ), non-innovative culture level ( $\leq 3$ ), innovative culture level ( $> 3$ )).

A: Mechanical Structure level ( $\leq 3$ )

		Knowledge Management
Social Capital	pearson correlation coefficient	0.678**
	Significance level	0.001
	numbers	20

\*\*. Correlation is significant at the 0.01 level (2-tailed).

As it is observed in the above table the significance level (lower than 0.05) and the coefficient correlation values indicate existence of a positive and significant relationship between knowledge management and social capital of organization in mechanical structure level. Therefore, it can be stated that there is a positive and significant relationship between knowledge management processes and social

capital, so that the higher social capital in the organization, the ratio of establishing knowledge management processes would be higher too.

B: Organic Structure level (>3)		
		Knowledge Management
Social Capital	pearson correlation coefficient	0.086
	Significance level	0.594
	numbers	41

As it is observed in the above table the significance level (higher than 0.05) and the coefficient correlation value imply absence of a positive and significant relationship between knowledge management and social capital of organization in organic structure level.

C: Non-innovative Culture level (<=3)		
		Knowledge Management
Social Capital	pearson correlation coefficient	0.335**
	Significance level	0.035
	numbers	40

\*\* . Correlation is significant at the 0.01 level (2-tailed).

As it is observed in the above table the significance level (lower than 0.05) and the coefficient correlation values indicate existence of a positive and significant relationship between knowledge management and social capital of organization in non-innovative culture level. Therefore, it can be stated that there is a positive and significant relationship between knowledge management processes and social capital, so that the higher social capital in the organization, the ratio of establishing knowledge management processes would be higher too.

D: Innovative Culture level (>3)		
		Knowledge Management
Social Capital	pearson correlation coefficient	0.086
	Significance level	0.594
	numbers	41

As it is observed in the above table the significance level (higher than 0.05) and the coefficient correlation value imply absence of a positive and significant relationship between knowledge management and social capital of organization in innovative culture level.

As shown by presented analyses, including culture and structure analyst variables in how knowledge management processes and organization's social capital relate to each other and to what extent, suggests that social capital at non- innovative cultural and mechanical structure levels have significant positive impact on knowledge management processes.

Although the results show that according to the respondents, average amount of the two variables, i.e. social capital and knowledge management processes at non-innovative and mechanical structure levels are less than innovative and organic structure levels ( following table), but the relation between the two variables of social capital and knowledge management processes are influenced by culture and structure contexts.

	Average amaount	
Analysis level	Knowledge management	Social capital
Mechanical Structure level	2.44	3.01
Organic Structure level	3.20	3.37
Non-innovative Culture level	2.76	3.05
Innovative Culture level	3.32	3.63

#### Sub-hypotheses:

- 1) There is significant relationship between structural dimension of social capital and knowledge management processes of target organization.

Nonparametric Correlations

		Knowledge Management processess
<b>Structural dimension</b>	Spearman correlation coefficient	0.113
	Significant level	0.385
	numbers	61

As it is observed in the above table the significant level (higher than 0.05) and correlation coefficient value indicates non-existence of positive and significant relation between structural dimension of social capital and knowledge management processes, so above mentioned hypothesis would be rejected.

- 2) There is significant relationship between relational dimension of social capital and knowledge management processes of target organization.

		Knowledge Management processess
<b>Relational dimension</b>	Pearson correlation coefficient	0.336
	Significant level	0.008
	numbers	61

As it is observed in the above table the significant level (lower than 0.05) and correlation coefficient value indicates existence of positive and significant relation between relational dimension of social capital and knowledge management processes. Therefore, the above hypothesis is not rejected.

- 3) There is significant relationship between cognitive dimension of social capital and knowledge management processes of target organization.

		Knowledge Management processess
<b>Cognitive dimension</b>	Spearman correlation coefficient	0.609
	Significant level	0.000
	numbers	61

As it is observed in the above table the significant level (lower than 0.05) and correlation coefficient value indicates existence of positive and significant relation between cognitive dimension of social capital and knowledge management processes. Therefore, the above hypothesis is not rejected.

- 4) There is a significant relationship between the ratio that a structure is organic and knowledge management processes of target organization.

		Knowledge Management processess
<b>Structure</b>	Pearson correlation coefficient	0.728
	Significant level	0.000
	numbers	61

As it is observed in the above table the significant level (lower than 0.05) and the coefficient correlation value indicates existence of a positive and significant relationship between the ratio that a structure is organic and knowledge management processes. Therefore, the above hypothesis is not rejected.

- 5) There is significant relationship between the ratio that a culture is innovative and knowledge management processes of target organization.

		Knowledge Management processess
<b>Culture</b>	Pearson correlation coefficient	0.708
	Significant level	0.000
	numbers	61

As it is observed in the above table the significant level (lower than 0.05) and the coefficient correlation value indicates existence of a positive and significant relationship between the ratio that a culture is innovative and knowledge management processes. Therefore, the above hypothesis is not rejected.

- 6) There is a significant relationship between the ratio that a structure is organic and social capital of target organization.

		Social capital
<b>Structure</b>	Pearson correlation coefficient	0.396
	Significant level	0.002
	numbers	61

As it is observed in the above table the significant level (lower than 0.05) and the coefficient correlation value indicates existence of a positive and significant relationship between the ratio that a structure is organic and social capital. Therefore, the above hypothesis is not rejected

- 7) There is significant relationship between the ratio that a culture is innovative and social capital of target organization.

		Social capital
<b>Culture</b>	Pearson correlation coefficient	0.569
	Significant level	0.000
	numbers	61

As it is observed in the above table the significance level (lower than 0.05) and the coefficient correlation value indicate existence of a positive and significant relationship between the ratio that a culture is innovative and social capital. Therefore, the above hypothesis is not rejected.

## 6. Discussion & Conclusion

As we observed our major hypothesis can be investigated in four various levels. The results obtained from our research showed that unlike our expectation with regard to the moderator variables of structure and culture in organic structure and innovative culture, the social capital does not have a positive and significant impact on knowledge management processes, and vice versa with regard to these two moderator variables in mechanical structure level and non-innovative culture, the social capital has a positive and significant impact on knowledge management processes. The reason of this issue can be searched in the culture and structure governing on military organizations that the research and development organization is undoubtedly following this culture and structure. The dominant structure of military organizations is a mechanical structure. In such organizations the formality is high, and the military organizations are intensively hierarchical and the employees in such organizations have completely limited and specified authorities too. The rules and regulations are governing considerably in such organizations, and in case of violation of the rules, heavy collision and penalties would grip violators. Hence, since the context of organic structure is not provided in the research and development organization, and since innovative culture that is a flexible and external oriented culture and emphasizes on risk-taking, entrepreneurship, adaptability, and dynamicity, is not governing on the military organizations in general and in this organization in particular as it should be, the lack of confirmation of a positive and significant relationship between social capital and knowledge management processes in organic level and innovative culture can be justified.

The interesting point of the research is that we observed that innovative culture and organic structure have independently a positive and significant relationship both with knowledge management and with social capital. But when we investigated the impact of each one of these moderator variables on the relationship between social capital and knowledge management processes, our hypothesis that there is a significant relationship in this respect was rejected. On the other hand we observed that the mean value of two variables of social capital and knowledge management processes in the organic structure level is more compared with mechanical structure and the mean value of these two variables in innovative culture level is more compared with non-innovative culture. This point shows us that the more our organizational

structure goes toward organic structure, it can be expected that the social capital level and knowledge management processes and consequently the level of knowledge sharing in the organization would go higher. This point is also true in respect of culture, meaning that the more our organizational culture moves toward innovative culture, the level of social capital and knowledge management processes and consequently knowledge sharing level in the organization would go higher.

Provided that our major research hypothesis was investigated in an organization with an organic structure and a culture different from the culture dominating on military organizations, the result obtained from testing hypothesis would probably show that there is a significant relationship between social capital and knowledge management processes through the moderating role of organic structure and innovative culture.

With regard to the sub-hypotheses, as we observed in the previous part, except hypothesis 1, our other sub-hypotheses were confirmed. With regard to the hypothesis 1, unlike our expectation, this hypothesis was rejected. What was expected was that the structural dimension of social capital like two other dimensions has role in strengthening knowledge management processes in the organization. With regard to hypotheses 2 and 3, as we expected these hypotheses were confirmed, and two relationship and cognitive dimensions of social capital impacted on knowledge management processes. In the previous researches it was emphasized that there is a positive and significant relationship between social capital and knowledge management processes, as an example in Hoffman's et al. research it was mentioned that the presence and existence of social capital can result in strengthening knowledge management processes, and they showed in their research that the social capital has more impact on some of the indicators of knowledge management (acquiring and transferring knowledge). [Alvani et al. \(2007\)](#) also investigated the role of social capital in knowledge management development, and while showing the existence of relationship between these two variables, investigated the impact of social capital on knowledge management indicators too. In summary in most of the performed researches the impact of social capital on knowledge management indicators had been investigated, but the impact of social capital indicators and dimensions on knowledge management processes was not observed separately. Hence, in this research by testing three sub-hypotheses, we found out the impact of each one of the dimensions of capital on knowledge management processes.

With regard to hypothesis 4, as we expected the more flexible our structure is and the more it moves toward organic structure, knowledge management processes in the organization would be strengthened. In the previous researches this point was also confirmed by other researchers; as an example in reviewing performed researches in this respect we observed that Nonaka in his researches showed that flexibility in the organizational structure helps encouraging people to state new ideas and thoughts and to build and transfer knowledge in the organization. Moreover, Gor and Gor also showed in their findings that a flexible organizational structure is among the basic factors in knowledge management. With regard to hypothesis 5, as we expected the more innovative the organizational culture is, the knowledge management processes in the organization would be strengthened. In reviewing the previous researches we had also observed that researchers believed that in an innovative culture the required context for implementing knowledge management processes is provided. Lidner and Maryam Alavi in their research had investigated in particular the role of culture in knowledge management, and at the end in their summary while stating the impact of various organizational cultures on knowledge management, mentioned to their finding that knowledge management in the organization is developed in the context of innovative culture.

With regard to hypothesis 6, as we expected the more flexible our structure is and the more it moves toward organic structure, the social capital in the organization would be strengthened. As we also previously mentioned in an organic structure there is a free flow of information, people can easily share knowledge, group working in this structure is high, people can also easily contact with their administrators, and therefore considering the social capital indicators and dimensions mentioned in research literature, existence of this relationship was not unexpected, because the result of flexible structures is the increase of trust among employees and consequently the increase of relationship among them. Enhancing communications strengthens people's common perceptions and beliefs and helps approaching employees' goals and culture, and all these cases result in strengthening social capital indicators in the organization. With regard to hypothesis 7, as we expected the more organizational culture moves toward becoming more innovative, the social capital in the organization would be strengthened. In reviewing the literature we observed that researchers investigated the relationship between organizational culture and social capital, and as an example Mr. Zhao Zheng et al. in their research showed that organizational culture impacts on social capital, and here we reach to this conclusion that existence of innovative culture in the organization results in strengthening social capital.

The results of the tests are given in the following table:

**Table 2.** The results obtained from the test of major hypothesis in four levels

Innovative culture level	Non-innovative culture level	Organic structure level	Mechanical structure level	
Rejected	Approved	Rejected	Approved	Major Hypothesis

**Table 3.** The results obtained from the test of sub-hypotheses

Approved or rejected	Hypothesis
Rejected	Hypothesis 1
Approved	Hypothesis 2
Approved	Hypothesis 3
Approved	Hypothesis 4
Approved	Hypothesis 5
Approved	Hypothesis 6
Approved	Hypothesis 7

## 7. Suggestions

### 7.1. Suggestions according to hypotheses

This research showed that social capital development in the organization impacts on development of knowledge management processes. Hence considering research hypotheses, the following suggestions are offered to the authorities and decision makers of organization:

- As it was mentioned the existence of social capital in the organization and effective interactions among organizational members provides the facility of sharing knowledge in the organization. Therefore, the organizational management should provide necessary contexts for strengthening social capital in the organization. Among the measures that can be performed are to facilitate and to strengthen the relationship between academic members of organization and academic members of other research organizations of the country and even premier research organizations of the world through holding national and international conferences and seminars, and also permitting and facilitating conditions for the presence of academic members in authentic and international conferences that are provided abroad. In this way in addition to further updating members about current world issues, it will result in increasing mutual trust among academic members and the organization.
- Organizational management should make changes in the structural, managerial, cultural processes of organization, so that it can provide the backgrounds of further strengthening of knowledge management processes and in particular maximum knowledge sharing in the organization. It should be considered that organizational structure governing on the organization should become as much as possible away from the structure governing on military organizations that mainly lack organic structure indicators, and we should provide the required context for strengthening knowledge management processes and also social capital by strengthening organic structure in the organization.
- In order to have a higher level of knowledge sharing, the culture of organization should emphasize on innovation, and breaking and changing values. The culture should develop gaining knowledge from outside organization, and in summary the culture of organization should move toward innovative culture.

### 7.2. Suggestions for Future Researchers

- Considering the point that this research was performed at one of the military organizations level that has a research-survey mission, and since the research and development organization has working conditions different from other military organizations, the researchers can perform this research issue in other organizations and compare the obtained results with the results of this research.
- The researchers can investigate the relationship between human capital or structural capital that are two other dimensions of intellectual capital and knowledge management processes and in

particular knowledge sharing in the organization, and by investigating this point in various organizations including military and non-military organizations, find out the impact ratio of each one these dimensions of intellectual capital on knowledge sharing in the organization, and in this way by offering solutions for strengthening the most important dimension or strengthening each one of these dimensions help further knowledge sharing in the organizations which nowadays is one of the major elements of successful and pioneer organizations.

- Investigating the relationship between important issues like organizational culture and organizational structure and social capital (or other dimensions of intellectual capital, which are human capital and structural capital) as independent variables impacting on social capital can be a research topic for future researchers. Because by recognizing an appropriate organizational culture and structure that results in further strengthening of social capital of organization, we can maximize knowledge management processes and in particular knowledge sharing in the organizations. Therefore, exact investigation of this issue that which culture and which structure in which organization (including military or non-military, public or private, and profit or non-profit) can help further strengthening social capital of that organization and consequently further knowledge sharing in it is a vital and important matter.
- Investigating the relationship between social capital and organizational commitment, performance improvement and citizenship behaviour are among the topics that can be studied in future by the researchers.
- The researchers can investigate the relationship between knowledge management processes and in particular knowledge sharing and variables like organizational performance, the ratio of organizational productivity, organizational entrepreneurship, creativity and innovation, and in this way clarify the ratio of impact, importance, and playing role of knowledge sharing variable in each one of these variables.

Inspite of investigating the moderating role of organic structure and innovative culture, the researchers in investigating the relationship between social capital and knowledge management processes with regard to their under investigation organization can investigate the role of other moderator variables in this relationship.

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